

## REMARKS

### Interview request

Applicants respectfully request a telephonic interview after the Examiner has reviewed the instant response and amendment. Applicants request the Examiner call Applicants' representative at 858 720 5133.

### Status of the Claims

#### *Pending claims*

Claims 60 to 64 and 91 to 112 are currently pending. Claims 107 to 112 have been withdrawn from consideration, thus, claims 60 to 64 and 91 to 106 are pending and under examination.

#### *Claims canceled*

In the instant amendment claims 107 to 112 are canceled, without prejudice. Thus, after entry of the instant amendment, claims 60 to 64 and 91 to 106 will be pending and under examination.

Applicants respectfully request entry of the amendments set forth in this response under 37 CFR §1.116. The amendment places the case in condition for allowance and places the case in better condition for appeal; the amendment does not raise any issues of new matter; and, the amended and new claims do not present new issues requiring further consideration or search.

#### *Claims allowable over the prior art*

Applicants thank the Examiner for noting that claims 60 to 64 and 91 to 106 appear to be allowable over the prior art of record.

#### *Outstanding Rejections*

Claims 60 to 64 and 91 to 106 stand rejected under 35 U.S.C. §112, second paragraph. Applicants respectfully traverse all outstanding objections to the specification and rejections of the claims.

Date of submission of amendment

The instant office action states that it is responsive to a communication filed September 04, 2003. However, Applicants respectfully note that the referred to communication, an Amendment and Response (responsive to the office action mailed December 27, 2002), was in fact submitted March 26, 2003, as shown by a certificate of mailing under 37 CFR 1.8(a). A duplicate copy of Applicants' March 26, 2003, response was expressed mailed to the Patent Office on August 12, 2003.

Information Disclosure Statement

Applicants thank the Examiner for considering and initialing the Form PTO 1449 forms submitted with the Information Disclosure Statements of March 4, 2003 and June 2, 2003.

Specification

In paragraph 2, page 3, of the instant office action, the amendment filed November 19, 2002 (mailed November 13, 2002), is objected to for allegedly containing new matter. In paragraph 3, page 4, of the instant office action, the specification is objected to because the sequence listing filed on September 04, 2003, allegedly contains sequences which are not supported by the specification as originally filed. Applicants respectfully traverse.

However, to expedite prosecution of this application, and to address the Examiner's concerns regarding the sequence listing filed on September 04, 2003 (as discussed in paragraph 3, page 4, of the instant office action), a substitute sequence listing containing SEQ ID NO:5 and SEQ ID NO:6 as filed is enclosed. Applicants submit herewith a substitute Sequence Listing in computer-readable form (CRF) as required by 37 CFR §1.824, a substitute Sequence Listing as required under 37 CFR §1.823(a), and a statement under 37 CFR §1.821(f). The undersigned hereby states that the paper copy of the sequence listing and the computer-readable form (CRF) copy of the Sequence Listing submitted in accordance with 37 CFR §1.825(a) and (b), respectively, are the same and contain no new matter. Accordingly, entry of this substitute sequence listing into this application is respectfully requested.

Further addressing the Examiner's concerns, as discussed in paragraph 3, page 4, of the instant office action, where it is alleged that the amendment to paragraphs 0047 and 0241 referring to SEQ ID NO:5 and SEQ ID NO:6 is not supported by the original disclosure,

paragraphs 0047 and 0241 have been amended to delete reference to SEQ ID NO:5 and SEQ ID NO:6 (reference to SEQ ID NO:5 and SEQ ID NO:6 was not present in the application as filed; the references to SEQ ID NO:5 and SEQ ID NO:6 in paragraphs 0047 and 0241 were added in Applicants' amendment of March 26, 2003).

After entry of the instant amendment, paragraphs 0047 and 0241 reference Applicants' specific nucleotide changes to the wild type sequence AppA (SEQ ID NO:7) without referring to SEQ ID NO:5 or SEQ ID NO:6. The aspect of the instant invention that changes nucleotides 389 and 390 in the wild type sequence (SEQ ID NO:7) is described in the specification, which states (as amended March 26, 2003) that the invention provides a polynucleotide having a nucleotide sequence substantially identical to SEQ ID NO:7 (the wild type sequence), and having a modified nucleotide sequence selected from nucleotide 389 is G and 390 is A; nucleotide 437 is T, 438 is G and 439 is G; 470 is C and 472 is T; 476 is T, 477 is G, and 478 is T; 689 is G, 690 is A and 691 is G; 728 is T, 729 is A, and 730 is T; 863 is T and 864 is G; 1016 is G, or any combination thereof. (emphasis added)

The specification as filed erroneously (a typographical error) referred to this aspect of the invention as comprising a modified nucleotide sequence selected from nucleotide 390 is G; 391 is A; nucleotide 438 is T; 439 is G; 440 is G; 471 is C; 473 is T; 477 is T; 448 is G; 449 is T; 690 is G, 691 is A; 692 is G; 729 is T, 730 is A; 731 is T; 864 is T and 865 is G; 1017 is G. Applicants' amendment of March 26, 2003, corrected this typographical error to correctly describe this aspect of the invention (nucleotide 389 is G and 390 is A, etc.). The correct exemplification of this aspect of the invention is a polynucleotide having a nucleotide sequence substantially identical to SEQ ID NO:7 (the wild type sequence) and having a modified nucleotide sequence selected from nucleotide 389 is G and 390 is A; 437 is T, 438 is G and 439 is G; 470 is C and 472 is T; 476 is T, 477 is G, and 478 is T; 689 is G, 690 is A and 691 is G; 728 is T, 729 is A, and 730 is T; 863 is T and 864 is G; 1016 is G.

The correct sequence of the invention is supported by the ATCC-deposited plasmid comprising SEQ ID NO:9 (Nov9x) (ATCC designation number PTA-4822; please see page 34 of Applicants' March 26, 2003, response). In the ATCC-deposited plasmid comprising SEQ ID NO:9 (Nov9x), nucleotide 389 is G and 390 is A; 437 is T, 438 is G and 439 is G; 470 is

C and 472 is T; 476 is T, 477 is G, and 478 is T; 689 is G, 690 is A and 691 is G; 728 is T, 729 is A, and 730 is T; 863 is T and 864 is G; 1016 is G.

To help visualize the correct sequence of this aspect the invention and to illustrate that this correction is not new matter, please refer to Appendix A, which is a nucleic acid sequence alignment of SEQ ID NO:9 (Nov9x, as deposited) and SEQ ID NO:7 (AppA, or wild type sequence). As highlighted by the sequence alignment, in SEQ ID NO:9 (Nov9x) nucleotide 389 is G and nucleotide 390 is A, 437 is T, 438 is G and 439 is G; 470 is C and 472 is T; 476 is T, 477 is G, and 478 is T; 689 is G, 690 is A and 691 is G; 728 is T, 729 is A, and 730 is T; 863 is T and 864 is G; 1016 is G. Accordingly, Applicants' amendment of March 26, 2003, changing paragraphs 0047 and 0241 to reflect that in one aspect of the invention nucleotide 389 is G and 390 is A (as compared to the wild type sequence SEQ ID NO:7, where nucleotide 389 is T and 390 is G), etc., is not new matter.

#### Claim objections

Claim 61 is objected to. The instant amendment addresses this issue.

#### Issues under 35 U.S.C. §112, second paragraph

Claims 60 to 64 and 91 to 106 are rejected under 35 U.S.C. §112, first paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which application regards as the invention.

##### *The phrase "liberation of inorganic phosphase"*

In paragraph 8, page 5, of the office action, it is alleged that claim 60 is indefinite for recitation of the phrase "liberation of inorganic phosphase". The instant amendment addresses this inadvertent typographical error.

##### *The phrase "having a sequence selected from the group ..."*

In paragraph 9, page 5, of the office action, it is alleged that claim 61 is indefinite for recitation of the phrase "having a sequence selected from the group consisting of: a)..., b)..., c)... a nucleic acid encoding the amino acid sequence". The instant amendment addresses this issue.

*The phrase "the method of claim 61 ... "*

In paragraph 10, page 5, of the office action, it is alleged that claim 91 is indefinite because it does not further limit claim 61 because a recombinant expression system encompasses a vector and a host cell.

Applicants respectfully note that at the time of the invention a skilled artisan would understand that while a vector and a host cell is one example of a recombinant expression system, the term "recombinant expression system" would also encompass *in vitro* and *in vivo* systems, and would also include, inter alia, a structural gene under the control of regulatory region, e.g., a promoter. A recombinant expression system comprising a structural gene comprising a phytase-encoding nucleic acid under control of a regulatory region is described, inter alia, on page 122, paragraph 0361, of the specification. A recombinant expression system can be a cell-based system, e.g., using a "host cell", or an *in vitro* expression system (e.g., *in vitro* transcription), as described, inter alia, on page 19, paragraph 0068, of the specification.

The instant amendment also addresses this issue. After entry of the instant amendment, claim 91 is directed to a method using a recombinant expression system comprising a vector comprising a phytase-encoding nucleic acid or a structural gene comprising a phytase-encoding nucleic acid under control of a regulatory region.

*The phrase "the method of claim 91 ... "*

In paragraph 11, page 6, of the office action, it is alleged that claim 92 is indefinite because it does not further limit claim 91. The instant amendment addresses this issue. After entry of the instant amendment, claim 92 is directed to a recombinant expression system or structural gene further comprising a host cell.

As noted above, a recombinant expression system can be a cell-based system, e.g., using a "host cell", or an *in vitro* expression system (e.g., *in vitro* transcription), as described, inter alia, on page 19, paragraph 0068, of the specification.

CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully aver that the Examiner can properly withdraw the rejection of the pending claims under 35 U.S.C. §112, second paragraphs. Applicants respectfully submit that all claims pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

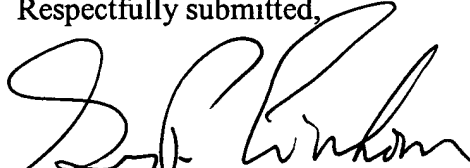
Applicants believe that no additional fees are necessitated by the present response and amendment. However, in the event any such fees are due, the Commissioner is hereby authorized to charge any such fees to Deposit Account No. 03-1952. Please credit any overpayment to this account.

As noted above, Applicants have requested a telephone conference with the undersigned representative to expedite prosecution of this application. After the Examiner has reviewed the instant response and amendment, please telephone the undersigned at 858 720 5133.

Date:

April 13, 2004

Respectfully submitted,



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